



## Animal Adaptations Lesson Plan/ Teacher Guide

- ❖ *This is a 2-3 day Lesson Plan. The individual activities can be used together or separately.*
- ❖ *Teachers need to prepare by collecting tools that represent types of beaks (spoons, tweezers, clothespins, eye droppers), trays, cups, and materials that represent foods (pieces of string/yarn, erasers, beans/popcorn kernels, gummy candies). Students will need a stopwatch or timer.*

### Objective

- Students will explain, compare, and/or contrast how adaptations displayed by animals enable them to survive in different environments.

### Lesson

1. Use the slides ***Animal Adaptations*** for students to **record examples** of birds with each type of beak.

Seed eaters- finch, cardinals, blue jays

Insect eater- bluebirds, sparrows, crows

Drilling Insect eaters- woodpeckers, sapsuckers

Nectar eater- hummingbirds, sunbirds

Aquatic omnivore- ducks, geese, swans, spoonbills

Aquatic scooping carnivore- pelicans, flamingos

Aquatic hunting carnivore- herons, egret

Raptors- eagles, owls, hawks, falcons

2. Explore:

- Students work in groups of four or more. They use four types of “bird beaks” to determine what kind of food can be picked up by each beak. **Each student uses one type of bird beak.**
- Spread all “food items” in a tray. There will be four cups to serve as their “stomachs”.
- Use timers to time 30 seconds per round. Students record results on the table.
- Round 1: students pick up as many pieces of string as they can using bird beak tools, and place them in a cup. Students count the pieces of string and record results on the table.
- Rounds 2-4: students repeat with each food item, recording results. Students predict what type of bird might have a beak that operates like each tool.

3. Reflect and Predict:

- Students answer the reflection questions and identify the various adaptations of the animals on the last page.
- Check for understanding and clarify if necessary.

4. Reading and questions: *Adaptations and Evolution, Darwin’s Finches*

5. *On Slides: BONUS VIDEO, Galapagos Finch Evolution — [HHMI BioInteractive Video](#)*



## Animal Adaptations Lesson Plan/ Teacher Guide

- ❖ *This is a 2-3 day Lesson Plan. The individual activities can be used together or separately.*
- ❖ *Teachers will need to prepare for the investigation by collecting tools to represent types of beaks (spoons, tweezers, clothespins, eye droppers), and foods (small pieces of string/yarn, small erasers, beans/popcorn, gummy candies), large trays, 4 cups per group. Students will also need a stopwatch or timer.*

### Objective

- Students will explain, compare, and/or contrast how adaptations displayed by animals enable them to survive in different environments.

### Essential Questions

- How do living things survive and change?
- What are some characteristics that allow plants and animals to survive when their environment changes?

### Lesson

1. Slides ***Animal Adaptations***: Students record examples of birds with different types of beaks.
  - **Seed eaters**- finch, cardinals, blue jays;
  - **Insect eaters**- bluebirds, sparrows, crows;
  - **Drilling Insect eaters**- woodpeckers, sapsuckers
  - **Nectar eaters**- hummingbirds, sunbirds;
  - **Aquatic omnivores**- ducks, geese, swans, spoonbills;
  - **Aquatic scooping carnivores**- pelicans, flamingos;
  - **Aquatic hunting carnivores**- herons, egret;
  - **Raptors**- eagles, owls, hawks, falcons.

2. Explore:

- Students work in groups of four or more, using four types of “bird beaks” to determine what kind of food can be picked up by each beak. **Each student uses one type of bird beak.**
- Spread all “food items” in a tray. There will be four cups to serve as their “stomachs”.
- Use timers to time 30 seconds per round. Students record results on the table.
- Round 1: students pick up as many pieces of string as they can using bird beak tools, and place them in a cup. Students count the pieces of string and record results on the table.
- Rounds 2-4: students repeat with each food item, recording results. Students predict what type of bird might have a beak that operates like each tool.

3. Reflect and Predict:

- Students will answer the reflection questions and identify the various adaptations of the animals on the last page.
- Check for understanding and clarify if necessary.




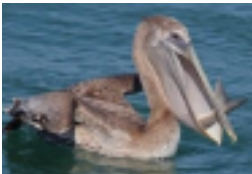




4. Reading and Questions: *Adaptations and Evolution, Darwin's Finches*

5. On Slides: BONUS VIDEO, *Galapagos Finch Evolution* — [HHMI BioInteractive Video](#)

Adapted from [Meg's Jump Drive Docs](#), [Teachers Pay Teachers](#)

## Animal Adaptations, Bird Beak Investigations





Have you ever wondered why there are so many different kinds of bird beaks? A bird's beak is mainly used for feeding. Bird beaks have different shapes and sizes, based on a bird's diet and available food sources. An adaptation is a part of an animal's body or way that an animal behaves that helps it to survive. A bird's specialized beak helps it to survive. Below are some common bird beak shapes and what they most commonly eat. **Record examples of species with each type of beak.**

	<p>Seed Eater: Cone shaped, strong beak used for cracking seeds and nuts</p> <p>Example: _____</p>		<p>Aquatic omnivore: fringed to strain plants, seeds, and small animals from mud and water</p> <p>Example: _____</p>
	<p>Insect eater: Thin, slender, pointed beaks used to pick insects off leaves, twigs, and bark</p> <p>Example: _____</p>		<p>Aquatic scooping carnivore: pouch-like or spoon-like beak used for scooping up fish or crustaceans</p> <p>Example: _____</p>
	<p>(Drilling) Insect eater: strong beaks that form a sharp tip for pecking holes in trees to find insects which live under the bark</p> <p>Example: _____</p>		<p>Aquatic hunting carnivore: fish-eating birds have spear-like beaks designed for stabbing fish</p> <p>Example: _____</p>
	<p>Nectar eater: long, tubular bills that resemble straws, used to sip nectar from flowers</p> <p>Example: _____</p>		<p>Raptors: sharp, "hooked" beaks used to tear prey into pieces small enough to swallow</p> <p>Example: _____</p>

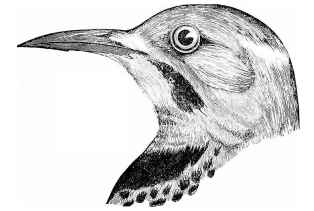
## 2. Investigate: Bird Beaks

- Work together in groups of four or more. Each person has one tool to use as a “bird beak” (spoon, tweezers, clothespin, dropper).
- Spread all the “food items” in a tray. (Food items: string or yarn, erasers, beans, gummy candy)
- Label the cups according to their “bird beak” tools: *spoon, tweezers, clothespin, dropper*. The cups are your “stomachs”!
- Round 1: Use a stopwatch to time 30 seconds.
  - Pick up as many pieces of **string** as you can using the different “bird beak” tools and place them in the appropriate cup.
  - Count the pieces of string and record your results on the table.
- Rounds 2-4: Repeat with each food item, recording your results.
- Use the last row to predict what type of bird might use that particular type of bird beak.

**How many can you pick up in 30 seconds?**

	Spoon 	Tweezers 	Clothespin 	Dropper 	Total Collected
1. String/ Yarn					
2. Small Eraser					
3. Beans					
4. Gummy candy					
Predict: What type of bird uses this type of beak?					

### 3. a) Reflect: Adaptations



1. What is an adaptation?

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2. What do you think is the difference between a physical adaptation and a behavioral adaptation?

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3. Explain: What would happen to eagles if a disease suddenly spread throughout all the small rodents in its habitat?

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4. What would be an example of a behavioral adaption of birds? \_\_\_\_\_

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### 3. b) Predict

Use the space provided to describe physical or behavioral adaptations of each animal:

	<p><u>Skunk</u></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>		<p><u>Monarch Butterfly</u></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
	<p><u>Shark</u></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>		<p><u>Otter</u></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
	<p><u>Red Fox</u></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>		<p><u>Ants</u></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>